

PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

PCT

NOTIFICATION OF TRANSMITTAL OF THE INTERNATIONAL SEARCH REPORT OR THE DECLARATION

(PCT Rule 44.1)

To:
TODD MATTINGLY
HAYNES AND BOONE, L.L.P.
901 MAIN STREET, SUITE 3100
DALLAS, TX 75202

Date of Mailing
(day/month/year)

28 MAR 2005

Applicant's or agent's file reference
25791.31.02

FOR FURTHER ACTION See paragraphs 1 and 4 below

International application No.
PCT/US04/00631

International filing date
(day/month/year)

12 January 2004 (12.01.2004)

Applicant
SHELL OIL COMPANY

1. ☒ The applicant is hereby notified that the international search report has been established and is transmitted herewith.

Filing of amendments and statement under Article 19:

The applicant is entitled, if he so wishes, to amend the claims of the international application (see Rule 46):

When? The time limit for filing such amendments is normally two months from the date of transmittal of the international search report.

Where? Directly to the International Bureau of WIPO, 34, chemin des Colombettes
1211 Geneva 20, Switzerland, Facsimile No.: (41-22) 740.14.35

For more detailed instructions, see the notes on the accompanying sheet.

2. ☐ The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect is transmitted herewith.

3. ☐ With regard to the protest against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:

☐ the protest together with the decision thereon has been transmitted to the International Bureau together with the applicant's request to forward the texts of both the protest and the decision thereon to the designated Offices.

☐ no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4. Reminders

Shortly after 18 months from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau as provided in Rules 90 *bis*.1 and 90 *bis*.3, respectively, before the completion of the technical preparations for international publication.

Within 19 months from the priority date, but only in respect of some designated Offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase until 30 months from the priority date (in some Offices even later); otherwise the applicant must, within 20 months from the priority date, perform the prescribed acts for entry into the national phase before those designated Offices.

In respect of other designated Offices, the time limit of 30 months (or later) will apply even if no demand is filed within 19 months.

See the Annex to Form PCT/IB/301 and, for details about the applicable time limits, Office by Office, see the *PCT Applicant's Guide*, Volume II, National Chapters and the WIPO Internet site.

Name and mailing address of the ISA/US
Mail Stop PCT, Attn: ISA/US
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
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Authorized officer

Hoang Dang

Telephone No. 703-308-2168

PCT/ISA 220

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 25791.31.02	FOR FURTHER ACTION	see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.
International application No. PCT/US04/00631	International filing date (<i>day/month/year</i>) 12 January 2004 (12.01.2004)	(Earliest) Priority Date (<i>day/month/year</i>)
Applicant SHELL OIL COMPANY		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 5 sheets.



It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the Report

- a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐

the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing:

☐

contained in the international application in written form.

☐

filed together with the international application in computer readable form.

☐

furnished subsequently to this Authority in written form.

☐

furnished subsequently to this Authority in computer readable form.

☐

the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐

the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

2. ☐ Certain claims were found unsearchable (See Box I).

3. ☒ Unity of invention is lacking (See Box II).

4. With regard to the **title**,

☒

the text is approved as submitted by the applicant.

☐

the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☐

the text is approved as submitted by the applicant.

☒

the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No. 1

☒

as suggested by the applicant.

☐

None of the figures

☐

because the applicant failed to suggest a figure.

☐

because this figure better characterizes the invention.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/00631

Box III TEXT OF THE ABSTRACT (Continuation of Item 5 of the first sheet)

The technical features mentioned in the abstract do not include a reference sign between parentheses (PCT Rule 8.1(d)).

NEW ABSTRACT

An expandable tubular liner includes a first tube, (205) a second tube (215), a mechanical coupling (210,220) for coupling the first and second tubes, and an insert (225,730,930) coupled to the mechanical coupling. The insert (225,730,930) is capable of forming a metallurgical bond with at least one of the tubes when energy is injected into the insert.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/00631

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : E21B 17/02, 23/00

US CL : 166/380, 382, 242.6; 228/194, 135; 285/21.2, 21.3, 288.3, 288.11, 289.5

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 166/380, 382, 242.6, 206, 207; 175/320; 228/194, 135; 285/21.2, 21.3, 21.1, 288.3, 288.11, 289.5

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6,419,147 A (DANIEL) 16 July 2002 (16/07/2002), see figures 1-6; column 3, lines 8-22; column 4, lines 11-25 and 50-67; column 5, lines 1-17; column 5, line 66 through column 6, line 11; and column 6 line 63 through column 7, line 3).	1-3, 7-17, 21-27, 31-40, 44-54, 58-64, 68-93, and 102-185
X	US 2,145,168 A (FLAGG) 24 January 1939 (24/01/1939), see figures 1-7 and page 2, column 1, line 12 through page 2, column 2, line 18).	90-93
A	US 3,709,306 A (CURINGTON) 09 January 1973 (09/01/1973), see insert 105, figures 1-7 and column 7, line 9 through column 8, line 25.	94-101
A	US 4,758,025 A (FRICK) 19 July 1988 (10/07/1988), see page 3, lines 4-44.	1-185
A	US 2003/0067166 A (SIVLEY, IV) 10 April 2003 (10/04/2003), see the entire document.	1-185
A	US 2003/0075338 A (SIVLEY, IV) 24 April 2003 (24/04/2003), see the entire patent.	1-185
A, E	US 2004/0060706 A (STEPHENSON) 01 April 2004 (01/04/2004), see the entire patent.	1-185
A	US 3,427,707 A (NOWOSADKO) 18 February 1969 (18/02/1969), see the entire patent.	90-101

☒ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

* Special categories of cited documents:	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E" earlier application or patent published on or after the international filing date	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&" document member of the same patent family
"O" document referring to an oral disclosure, use, exhibition or other means	
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search

04 December 2004 (04.12.2004)

Date of mailing of the international search report

28 MAR 2005

Name and mailing address of the ISA/US

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Commissioner for Patents
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Authorized officer

Hoang Dang

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PCT/US04/00631

INTERNATIONAL SEARCH REPORT

C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5,064,004 A (LUNDELL) 12 November 1991 (12/11/1991), see the entire patent.	1-185
A	US 4,468,309 A (WHITE) 28 August 1984 (29/08/1984), see the entire patent.	1-185

INTERNATIONAL SEARCH REPORT

PCT/US04/00631

BOX II. OBSERVATIONS WHERE UNITY OF INVENTION IS LACKING

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must be paid.

Group I, claim(s) 1-89 and 102-185, drawn to a method, a tubular liner or an apparatus.

Group II, claim(s) 90-93, drawn to a tubular assembly.

Group III, claim(s) 94-110, drawn to a cold-weldable insert.

The special technical feature of the claims of Group I is the radially expanding and plastically deforming the coupled first and second tubes.

The special technical feature of the claims of Group II is the combination of a mechanical connection and a metallurgical connection between first and second tubes.

The special technical feature of the claims of Group III is the tapered tubular member fabricated from one or more materials capable of forming a metallurgical bond with at least one adjacent tubular members.

Unity between Groups I-III is lacking since each Group relies on a different special technical feature as explained above.

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

To:
TODD MATTINGLY
HAYNES AND BOONE, L.L.P.
901 MAIN STREET, SUITE 3100
DALLAS, TX 75202

Date of mailing
(day/month/year) **28 MAR 2005**

Applicant's or agent's file reference

FOR FURTHER ACTION

See paragraph 2 below

25791.31.02

International application No.

International filing date (day/month/year)

Priority date (day/month/year)

PCT/US04/00631

12 January 2004 (12.01.2004)

International Patent Classification (IPC) or both national classification and IPC

IPC(7): E21B 17/02, 23/00 and US Cl.: 166/380, 382, 242.6; 228/194, 135; 285/21.2, 21.3, 288.3, 288.11, 289.5

Applicant

SHELL OIL COMPANY

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☒ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☒ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/ US

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**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/US04/00631

Box No. I Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This opinion has been established on the basis of a translation from the original language into the following language _____, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).

2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

☐ a sequence listing

☐ table(s) related to the sequence listing

b. format of material

☐ in written format

☐ in computer readable form

c. time of filing/furnishing

☐ contained in international application as filed.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/US04/00631

Box No. IV Lack of unity of invention

1. ☒ In response to the invitation (Form PCT/ISA/206) to pay additional fees the applicant has:
- ☒ paid additional fees
 - ☐ paid additional fees under protest
 - ☐ not paid additional fees
2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose not to invite the applicant to pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rule 13.1, 13.2 and 13.3 is
- ☐ complied with
 - ☒ not complied with for the following reasons:
See the lack of unity section of the International Search Report(Form PCT/ISA/210)

4. Consequently, this opinion has been established in respect of the following parts of the international application:
- ☒ all parts.
 - ☐ the parts relating to claims Nos. _____

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/US04/00631

Box No. V Reasoned statement under Rule 43 bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims <u>Please See Continuation Sheet</u>	YES
	Claims <u>Please See Continuation Sheet</u>	NO
Inventive step (IS)	Claims <u>Please See Continuation Sheet</u>	YES
	Claims <u>Please See Continuation Sheet</u>	NO
Industrial applicability (IA)	Claims <u>Please See Continuation Sheet</u>	YES
	Claims <u>Please See Continuation Sheet</u>	NO

2. Citations and explanations:

Claims 1-3, 7-17, 21-27, 31-40, 44-54, 58-64, 68-93 and 102-185 lack novelty under PCT Article 33(2) as being anticipated by DANIEL '147 (see figures 1-6; column 3, lines 8-22; column 4, lines 11-25 and 50-67; column 5, lines 1-17; column 5, line 66 through column 6, line 11; and column 6, line 63 through column 7, line 3).

Claims 90-93 lack novelty under PCT Article 33(2) as being anticipated by FLAGG '168 (see figures 1-7 and page 2, line 12 through page 2, column 2, line 18).

Claims 4-6, 18-20, 28-30, 41-43, 55-57 and 65-67 meet the criteria set out in PCT Article 33(2)-(3), because the prior art does not teach or fairly suggest the invention as claimed and wherein the insert comprises an inner core of a first material and an outer layer of a second material having a lower melting point than the first material..

Claims 94-101 meet the criteria set out in PCT Article 33(2)-(3), because the prior art does not teach or fairly suggest a cold weldable insert for forming a metallurgical bond between overlapping threaded ends of adjacent tubular members as claimed and wherein the tapered tubular member comprises one or more threaded portions for engaging the threaded ends of the adjacent tubular members.

Claims 1-185 meet the criteria set out in PCT Article 33(4), and thus having industrial applicability because the subject matter claimed can be made or used in the petroleum industry.

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/US04/00631

Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

In pages 1, 10, 12 and 15, the application number of one of copending applications recited is missing.

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/US04/00631

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

V.1. Reasoned Statements:

The opinion as to Novelty was positive (Yes) with respect to claims 4-6, 18-20, 28-30, 41-43, 55-57, 65-67, and 94-101

The opinion as to Novelty was negative (No) with respect to claims 1-3, 7-17, 21-27, 31-40, 44-54, 58-64, 68-93 and 102-185

The opinion as to Inventive Step was positive (Yes) with respect to claims 4-6, 18-20, 28-30, 41-43, 55-57, 65-67, and 94-101

The opinion as to Inventive Step was negative (NO) with respect to claims 1-3, 7-17, 21-27, 31-40, 44-54, 58-64, 68-93 and 102-185

The opinion as to Industrial Applicability was positive (YES) with respect to claims 1-185

The opinion as to Industrial Applicability was negative (NO) with respect to claims NONE